

ANNEX NO. 1
TO
NONREIMBURSABLE SPACE ACT UMBRELLA AGREEMENT SAA1-36475
BETWEEN
THE NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
LANGLEY RESEARCH CENTER
AND
TUFTS UNIVERSITY
FOR
INVESTIGATION OF SILK-BASED MATERIALS FOR SPACE APPLICATIONS

ARTICLE 1. PURPOSE

This Annex shall be for the purpose of evaluation and characterization of silk-based materials, uniquely produced by Tufts University, for possible use in dust tolerant applications susceptible to temperature extremes relevant to space and planetary exploration. NASA LaRC will use specialized materials characterization techniques to evaluate material test articles provided by Tufts University.

These efforts will be integrated with larger scale characterization activities planned as part of the NASA Lunar Occupancy Dust Surface Separation Technologies (LO-DuSST) project to support lunar dust mitigation efforts and improve the wear-resilience of components used in the lunar environment.

The legal authority for this Annex, consistent with the Umbrella Agreement, is in accordance with the National Aeronautics and Space Act (51 U.S.C. § 20113(e)).

ARTICLE 2. RESPONSIBILITIES

A. NASA LaRC will use reasonable efforts to:

1. Evaluate up to ten (10) material test samples to be provided by Tufts University and share results.
2. Return test samples to Tufts University.
3. Host Tufts University visitors for tour of LaRC facilities, on as “as available” basis and in accordance with standard NASA processes and procedures.
4. Disseminate research results, in collaboration with Tufts University, through conference papers, technical presentations, and publications in peer-reviewed journals.

B. Partner will use reasonable efforts to:

1. Process and characterize raw materials.
2. Provide up to ten (10) test samples, and related Tufts University characterization information collected, for evaluation at NASA LaRC.

3. Perform additional testing and characterization of test samples, as needed, and share results.
4. Disseminate research results, in collaboration with NASA LaRC, through conference papers, technical presentations, and publications in peer-reviewed journals.
5. Host NASA visitors for tour of Tufts University facilities, on an “as available” basis and in accordance with standard University processes and procedures.

ARTICLE 3. SCHEDULE AND MILESTONES

The planned major milestones for the activities for this Annex defined in the "Responsibilities" Article are as follows:

1. Tufts University to produce and provide up to ten (10) test samples and characterization information for NASA LaRC evaluation.	Within three (3) months following Effective Date of Annex
2. NASA LaRC to complete testing and characterization of the provided test samples and share results with Tufts University.	Within five (5) months following Milestone 1
3. NASA LaRC to return test samples to Tufts University	Within one (1) month following Milestone 2
4. Tufts University to perform additional testing and characterization, if deemed necessary by the parties, and share results with NASA LaRC.	Within five (5) months following Milestone 3
5. NASA LaRC and Tufts University to complete dissemination of research results.	Within three (3) months following Milestone 4
6. Tufts University to host NASA visitors for tour of Tufts University facilities.	As available during Annex period of performance
7. NASA LaRC to host Tufts University visitors for tour of LaRC facilities.	As available during Annex period of performance

ARTICLE 4. FINANCIAL OBLIGATIONS

There will be no transfer of funds between the Parties under this Agreement and each Party will fund its own participation. All activities under or pursuant to this Agreement are subject to the availability of funds, and no provision of this Agreement shall be interpreted to require obligation or payment of funds in violation of the Anti-Deficiency Act, (31 U.S.C. § 1341).

ARTICLE 5. INTELLECTUAL PROPERTY RIGHTS - DATA RIGHTS

A. Data produced under this Annex which is subject to paragraph C. of the Intellectual Property Rights - Data Rights Article of the Umbrella Agreement will be protected for the period of one (1) year.

B. In accordance with paragraph H. of the Intellectual Property Rights - Data Rights Article of the Umbrella Agreement, Disclosing Party provides the following Data to Receiving Party. The lists below may not be comprehensive, are subject to change, and do not supersede any restrictive notice on the Data provided.

1. Background Data: *The Disclosing Party's Background Data, if any, will be identified in a separate technical document.*
2. Third Party Proprietary Data: *The Disclosing Party's Third-Party Proprietary Data, if any, will be identified in a separate technical document.*
3. Controlled Government Data: *The Disclosing Party's Controlled Government Data, if any, will be identified in a separate technical document.*
4. The following software and related Data will be provided to Partner under a separate Software Usage Agreement: *None*

ARTICLE 6. TERM OF ANNEX

This Annex becomes effective upon the date of the last signature below ("Effective Date") and shall remain in effect until the completion of all obligations of both Parties hereto, one (1) year and six (6) months from the Effective Date, or expiration of the Umbrella Agreement, whichever comes first.

ARTICLE 7. RIGHT TO TERMINATE

Either Party may unilaterally terminate this Annex by providing thirty (30) calendar days written notice to the other Party.

ARTICLE 8. POINTS OF CONTACT

The following personnel are designated as the Points of Contact between the Parties in the performance of this Annex.

Technical Points of Contact	
<u>NASA Langley Research Center</u> Valerie Wiesner Research Materials Engineer Mail Stop 226 Hampton, VA 23681 Phone: 757.864.4384 Email: valerie.l.wiesner@nasa.gov	<u>Tufts University</u> Fiorenzo Omenetto Professor, Department of Biomedical Engineering 200 Boston Avenue Medford, MA 02155 Phone: 617.627.4972 Email: fiorenzo.omenetto@tufts.edu

ARTICLE 9. MODIFICATIONS

Any modification to this Annex shall be executed, in writing, and signed by an authorized representative of NASA and the Partner. Modification of an Annex does not modify the terms of the Umbrella Agreement.

ARTICLE 10. SIGNATORY AUTHORITY

The signatories to this Annex covenant and warrant that they have authority to execute this Annex. By signing below, the undersigned agrees to the above terms and conditions.

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION LANGLEY RESEARCH CENTER	TUFTS UNIVERSITY
BY: _____ David A. Dress Director, Space Technology and Exploration Directorate	BY: <u>Jori Barabino</u> Jori Barabino Director, Pre-Award Research Administration Office of the Vice Provost for Research
DATE: _____	DATE: <u>4/25/2022</u>